

What is claimed is:

1. A transparent electroconductive layered structure comprising a flat and smooth substrate, transparent electroconductive anode layer containing fine electroconductive particles as the main component, formed on the flat and smooth substrate by a coating method, and transparent substrate joined to the transparent electroconductive anode layer via an adhesive layer, wherein the flat and smooth substrate can be released from the transparent electroconductive anode layer.
2. A transparent electroconductive layered structure comprising a flat and smooth substrate, hole-injection layer formed on the flat and smooth substrate by a coating method, transparent electroconductive anode layer containing fine electroconductive particles as the main component, formed on the hole-injection layer by a coating method, and transparent substrate joined to the transparent electroconductive anode layer via an adhesive layer, wherein the flat and smooth substrate can be released from the hole-injection layer.
3. The transparent electroconductive layered structure according to Claim 1 or 2, wherein the transparent electroconductive anode layer is further coated partly with a metallic auxiliary electrode.
4. The transparent electroconductive layered structure according to Claim 1 or 2, wherein a transparent coat layer is further formed by a coating method between the transparent electroconductive anode layer and adhesive layer.
5. The transparent electroconductive layered structure according to

Claim 1 or 2, wherein the adhesive layer contains, in addition to an organic resin, a dehydrating agent and/or deoxidant.

6. The transparent electroconductive layered structure according to Claim 1 or 2, wherein the fine electroconductive particles have an average particle diameter of 1 to 100 nm, contain a noble metal and form a network structure in the transparent electroconductive anode layer.

7. The transparent electroconductive layered structure according to Claim 6, wherein the fine noble-metal-containing particles are metallic particles containing gold and/or silver.

8. The transparent electroconductive layered structure according to Claim 1 or 2, wherein the fine electroconductive particles are oxide particles.

9. The transparent electroconductive layered structure according to Claim 8, wherein the fine electroconductive oxide particles are of at least one species of material selected from the group consisting of indium oxide, tin oxide and zinc oxide.

10. The transparent electroconductive layered structure according to Claim 1 or 2, wherein the adhesive layer has a sufficient thickness to cover projections of the fine electroconductive particles which constitute the surface of the transparent electroconductive anode layer.

11. A method for producing the transparent electroconductive layered structure according to Claim 1, wherein a coating liquid containing fine electroconductive particles dispersed in a solvent for forming the transparent electroconductive anode layer is spread and dried on the sufficiently flat and

smooth substrate, which can be released from the coating layer formed thereon, to form the transparent electroconductive anode layer, and the transparent substrate is joined to the transparent electroconductive anode layer with an adhesive agent.

12. A method for producing the transparent electroconductive layered structure according to Claim 2, wherein a coating liquid containing a hole-injecting material in a solvent for forming the hole-injection layer is spread and dried on the sufficiently flat and smooth substrate, which can be released from the coating layer formed thereon, to form the hole-injection layer on the flat and smooth substrate, then a coating liquid containing fine electroconductive particles in a solvent for forming the transparent electroconductive anode layer is spread and dried on the hole-injection layer to form the transparent electroconductive anode layer, and the transparent substrate is joined to the transparent electroconductive anode layer with an adhesive agent.

13. The method according to Claim 11 or 12 for producing the transparent electroconductive layered structure, wherein the transparent electroconductive anode layer formed is coated partly with a metallic auxiliary electrode, formed by printing the transparent electroconductive anode layer with a paste containing fine metallic particles in a solvent for forming the metallic auxiliary electrode and curing the paste.

14. The method according to Claim 11 or 12 for producing the transparent electroconductive layered structure, wherein a coating liquid containing a binder in a solvent for forming a transparent coat layer is spread and dried on the transparent electroconductive anode layer to coat the anode layer with the transparent coat layer, and the transparent

substrate is joined to the transparent coat layer with an adhesive agent.

15. The method according to Claim 11 or 12 for producing the transparent electroconductive layered structure, wherein the adhesive agent contains, in addition to an organic resin, a dehydrating agent and/or deoxidant.

16. The method according to Claim 11 or 12 for producing the transparent electroconductive layered structure, wherein the fine electroconductive particles have an average particle diameter of 1 to 100 nm, and contain a noble metal.

17. The method according to Claim 16 for producing the transparent electroconductive layered structure, wherein the fine noble-metal-containing particles are metallic particles containing gold and/or silver.

18. The method according to Claim 11 or 12 for producing the transparent electroconductive layered structure, wherein the fine electroconductive particles are fine electroconductive oxide particles.

19. The method according to Claim 18 for producing the transparent electroconductive layered structure, wherein the fine electroconductive oxide particles are of at least one species of material selected from the group consisting of indium oxide, tin oxide and zinc oxide.

20. An organic EL device provided with a light-emitting layer of polymer and cathode layer, wherein the light-emitting layer is formed by a coating method on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the

transparent electroconductive layered structure according to Claim 1 or 2, and the cathode layer is formed on the light-emitting layer of polymer.

21. An organic EL device provided with a light-emitting layer of polymer and cathode layer, wherein the light-emitting layer is formed by a coating method on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure according to Claim 3, and the cathode layer is formed on the light-emitting layer of polymer.

22. An organic EL device provided with a light-emitting layer of polymer and cathode layer, wherein the light-emitting layer is formed by a coating method on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure according to Claim 4, and the cathode layer is formed on the light-emitting layer of polymer.

23. An organic EL device provided with a light-emitting layer of polymer and cathode layer, wherein the light-emitting layer is formed by a coating method on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure according to Claim 5, and the cathode layer is formed on the light-emitting layer of polymer.

24. An organic EL device provided with a light-emitting layer of polymer and cathode layer, wherein the light-emitting layer is formed by a coating method on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure according to Claim 6, and

the cathode layer is formed on the light-emitting layer of polymer.

25. An organic EL device provided with a light-emitting layer of polymer and cathode layer, wherein the light-emitting layer is formed by a coating method on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure according to Claim 8, and the cathode layer is formed on the light-emitting layer of polymer.

26. A method for producing the organic EL device, wherein a coating liquid, containing a high-molecular-weight light-emitting material or precursor therefor in a solvent, for forming a light-emitting layer of polymer is spread and dried on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure produced by the method according to Claim 11 or 12 to form the light-emitting layer of polymer on the surface, and a cathode layer is formed on the light-emitting layer of polymer.

27. A method for producing the organic EL device, wherein a coating liquid, containing a high-molecular-weight light-emitting material or precursor therefor in a solvent, for forming a light-emitting layer of polymer is spread and dried on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure produced by the method according to Claim 13 to form the light-emitting layer of polymer on the surface, and a cathode layer is formed on the light-emitting layer of polymer.

28. A method for producing the organic EL device, wherein a coating liquid, containing a high-molecular-weight light-emitting material or precursor therefor in a solvent, for forming a light-emitting layer of polymer is spread and dried on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure produced by the method according to Claim 14 to form the light-emitting layer of polymer on the surface, and a cathode layer is formed on the light-emitting layer of polymer.

29. A method for producing the organic EL device, wherein a coating liquid, containing a high-molecular-weight light-emitting material or precursor therefor in a solvent, for forming a light-emitting layer of polymer is spread and dried on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure produced by the method according to Claim 15 to form the light-emitting layer of polymer on the surface, and a cathode layer is formed on the light-emitting layer of polymer.

30. A method for producing the organic EL device, wherein a coating liquid, containing a high-molecular-weight light-emitting material or precursor therefor in a solvent, for forming a light-emitting layer of polymer is spread and dried on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure produced by the method according to Claim 16 to form the light-emitting layer of polymer on the surface, and a cathode layer is formed on the light-emitting layer of polymer.

31. A method for producing the organic EL device, wherein a coating liquid, containing a high-molecular-weight light-emitting material or precursor therefor in a solvent, for forming a light-emitting layer of polymer is spread and dried on the surface of the transparent electroconductive anode layer or hole-injection layer left by the flat and smooth substrate released from the transparent electroconductive layered structure produced by the method according to Claim 18 to form the light-emitting layer of polymer on the surface, and a cathode layer is formed on the light-emitting layer of polymer.